



# **Grade 7 Mathematics**

***Constructed Response  
Scoring Guides  
Fall 1996***



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## **GRADE 4**

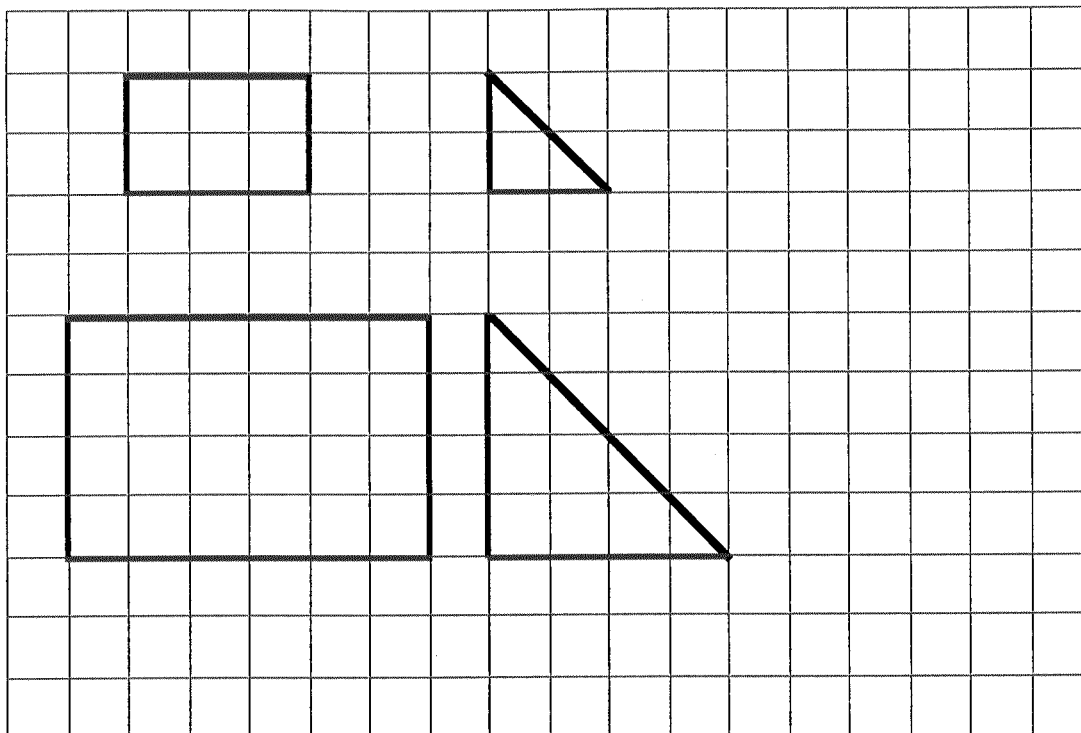
### **MEAP MATHEMATICS SCORING GUIDES**

These scoring rubrics are provided to help evaluate and score the constructed response items on the 1996 MEAP Mathematics Test, Grade 4. For each item, a solution is given as well as actual student responses with annotations explaining the score point given.

### **General Recommendations and Guidelines**

- Studying the sample student responses and annotations will help you understand the essence of what is expected at each score point for a particular question. Keep in mind that these sample student responses represent only a few of the many possible responses for a given score point.
- To ensure the accuracy and consistency of your scoring, keep the following in mind:
  1. Continually review the scoring rubric, the annotated score guide and student samples, especially when you are in doubt regarding a particular student response.
  2. Do not judge one student's paper by another. Instead, apply the same objective standards to each paper by evaluating the response in terms of the scoring rubric and guides.
  3. It is advisable to devise a method to conceal student names when scoring the papers.
  4. Review papers you scored earlier in the process to make sure you are using the same standards.
  5. Do not think that length is synonymous with quality. A long response may be redundant, wordy or vague.
  6. Do not allow the issues of handwriting, spelling, or grammar to affect your ability to score.

## 7th Grade Constructed Response #1, Exemplar

**Exemplar****A****B**

	Original	Enlarged
<b>Rectangle</b>	<u>6</u>	<u>24</u>
<b>Triangle</b>	<u>2</u>	<u>8</u>

**C** Student must convey that the area of each new figure is 4 times the area of the original.

## 7th Grade Constructed Response #1, Rubric

### Scoring Rubric

#### **Part A: 2 points**

- 2 points** Both figures correctly enlarged
- 1 point** 1 figure correctly enlarged; the other figure may have the correct shape but incorrect enlargement
- 0 points** 1 figure correctly enlarged; the other figure omitted  
**OR** 2 correct shapes but both enlargements are incorrect  
**OR** Any other response

#### **Part B: 2 points**

- 2 points** Correct areas for both original and new figures original areas correct with Enlarged areas incorrect, but incorrect areas are based on new figures drawn in Part A.
- 1 point** 2 of the 4 areas correct; other 2 incorrect; incorrect areas must not be based on new figures drawn in Part A.
- 0 points** Any other response

#### **Part C: 1 point**

- 1 point** Correct answer that area of new figure is 4 times as large as area of original figure  
**OR** Answer based on incorrect drawings in Part A
- 0 points** Any other response

## 7th Grade Constructed Response #1

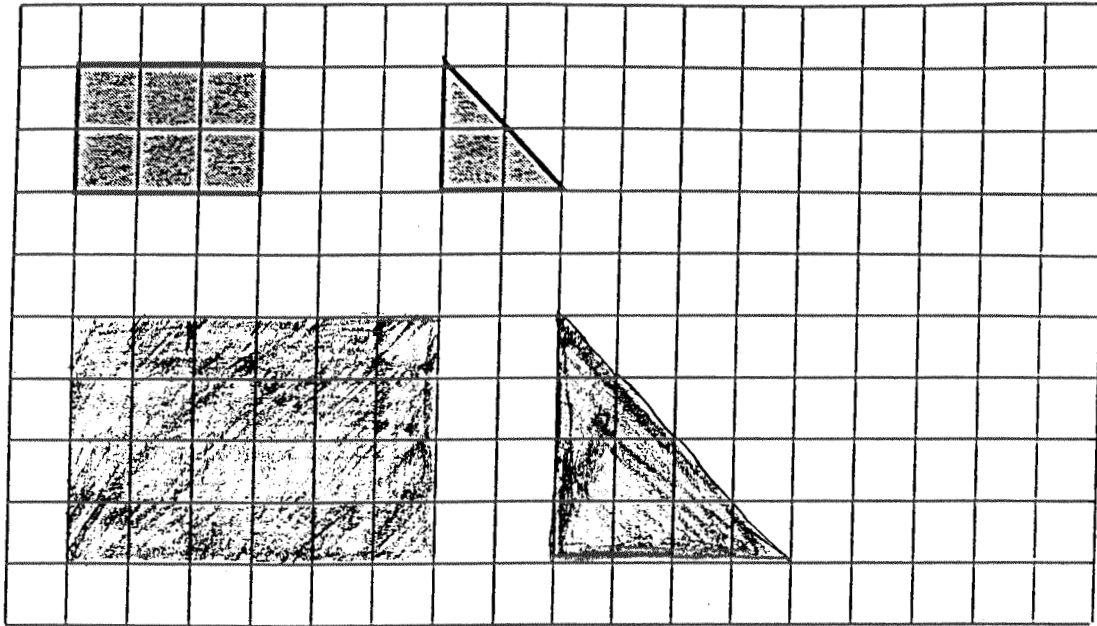
### Scoring of student papers

Papers are numbered on back in upper right hand corner.

#1:	5 points	Parts A, B and C all correct
#2:	5 points	Parts A, B and C all correct
#3:	4 points	Part A correct for 2 points; Part B correct for 2 points; Part C omitted for 0 points
#4:	4 points	Part A correct for 2 points; Part B correct for 2 points; Part C incorrect for 0 points
#5:	3 points	Part A correct for 2 points; Part B original and enlarged areas of rectangle correct for 1 point; both triangle areas incorrect; Part C incorrect for 0 points
#6:	3 points	Part A correct for 2 points; Part B original and enlarged areas of rectangle correct for 1 point; both triangle areas incorrect; Part C incorrect for 0 points
#7:	2 points	Only triangle is enlarged correctly in Part A for 1 point. Both areas of original figures correct for 1 point in Part B; Areas of enlarged figures are incorrect. Part C omitted for 0 points.
#8:	2 points	Only triangle is correctly enlarged in Part A for 1 point. Areas of original rectangle and incorrect enlargement are correct for 1 point in Part B. Both triangle areas are incorrect. Part C is omitted for 0 points.
#9:	1 point	Both figures incorrectly enlarged in Part A for 0 points. Both areas of original figures correct for 1 point in Part B; Area of enlarged rectangle is correctly based on incorrect drawing but area of enlarged triangle is incorrect; Part C incorrect for 0 points.
#10:	0 points	Both figures incorrectly enlarged in Part A for 0 points. All areas in Part B are incorrect for 0 points. Explanation in Part C is incorrect for 0 points.

## PAPER 1

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.



- A Sketch two new figures beneath the ones on the grid. Make the sides on each new figure twice the length of the sides on each original figure.
- B. What is the area of each of the original figures? What is the area of each enlarged sketch?

	Original	Enlarged
Rectangle	<u>6</u>	<u>24</u>
Triangle	<u>2</u>	<u>8</u>

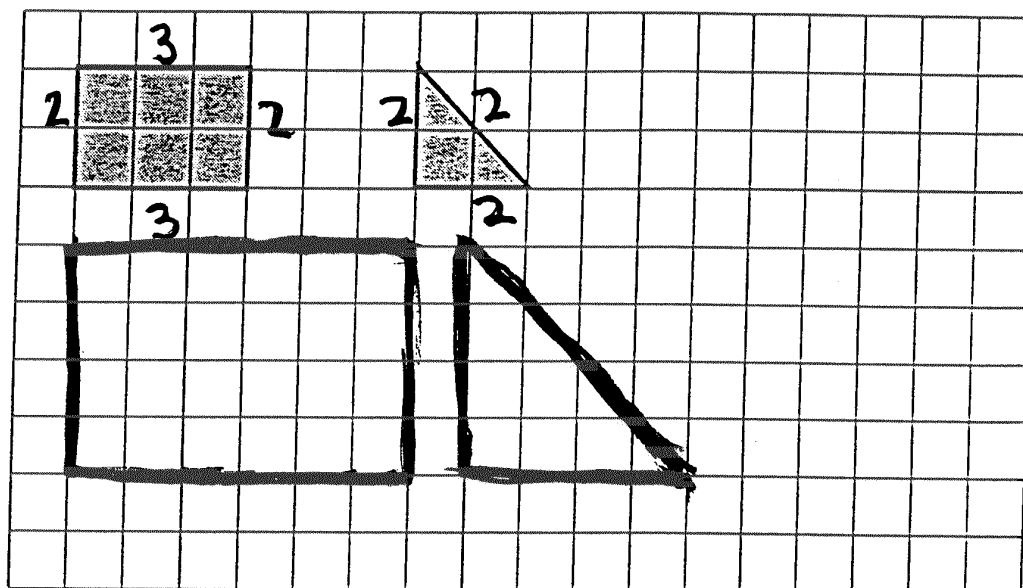
- C Describe the relationship between the area of each original figure and its enlargement.

The relationship between the area of each original and it's enlargement is that you multiply the original by four.



## PAPER 2

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.



$2 \times 2 = 4$ , so all of the sides that were 2 spaces long now become 4.  
 $2 \times 3 = 6$ , so all of the sides that were 3 spaces now become 6.

- A Sketch two new figures beneath the ones on the grid. Make the sides on each new figure twice the length of the sides on each original figure.
- B. What is the area of each of the original figures? What is the area of each enlarged sketch?

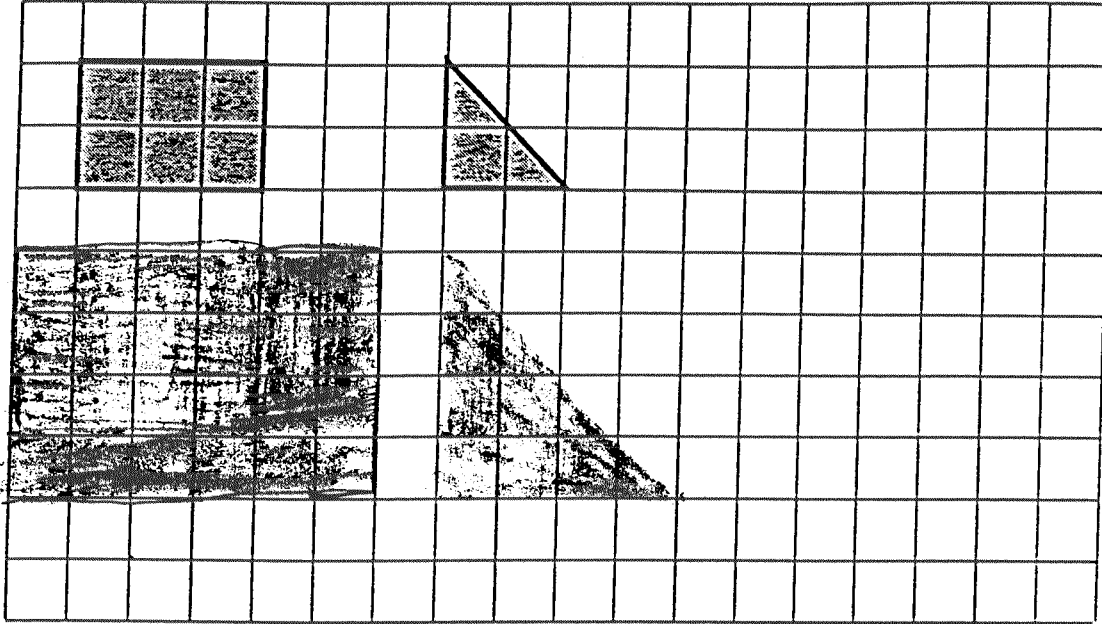
	Original	Enlarged
Rectangle	6 squares	24 squares
Triangle	$\frac{1}{2} \times 2 = 2$ squares	$\frac{6}{2} \times 4 = 12$ squares

- C Describe the relationship between the area of each original figure and its enlargement.

the enlargement is 4 times as big.

## PAPER 3

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.



- A Sketch two new figures beneath the ones on the grid. Make the sides on each new figure twice the length of the sides on each original figure.
- B. What is the area of each of the original figures? What is the area of each enlarged sketch?

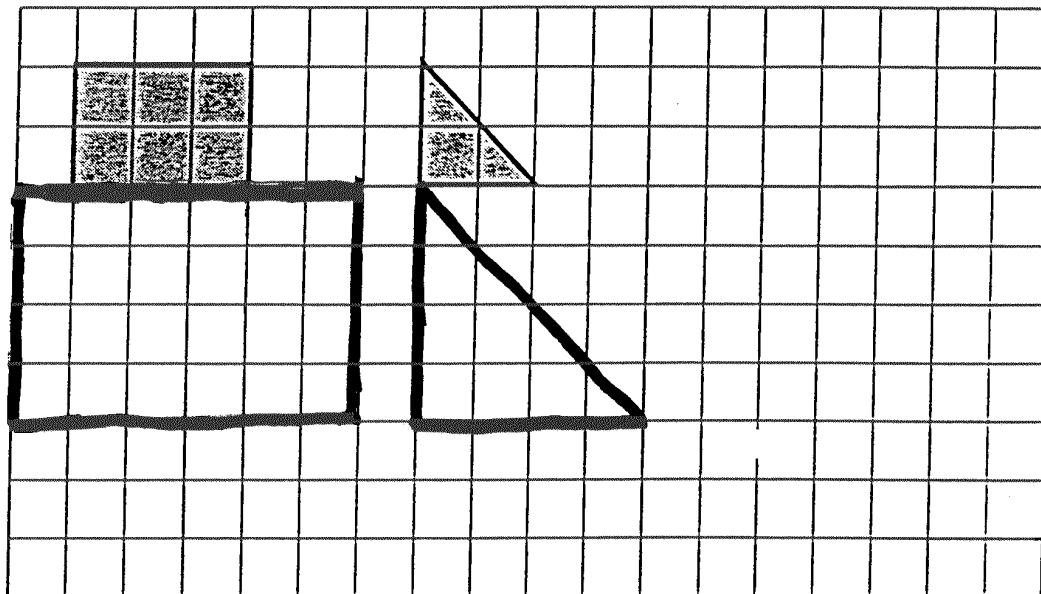
	Original	Enlarged
Rectangle	<u>6</u>	<u>24</u>
Triangle	<u>2</u>	<u>8</u>

- C Describe the relationship between the area of each original figure and its enlargement.

?

## PAPER 4

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.



- A Sketch two new figures beneath the ones on the grid. Make the sides on each new figure twice the length of the sides on each original figure.
- B. What is the area of each of the original figures? What is the area of each enlarged sketch?

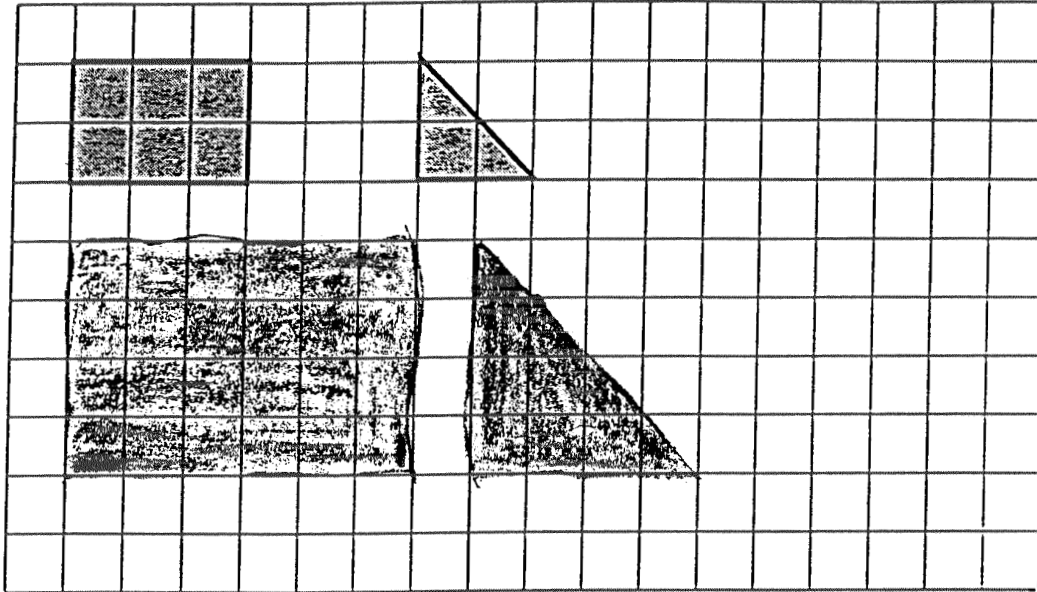
	Original	Enlarged
Rectangle	<u>6</u>	<u>24</u>
Triangle	<u>2</u>	<u>8</u>

- C Describe the relationship between the area of each original figure and its enlargement.

*The larger figures are twice the length*

## PAPER 5

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.



- A Sketch two new figures beneath the ones on the grid. Make the sides on each new figure twice the length of the sides on each original figure.
- B. What is the area of each of the original figures? What is the area of each enlarged sketch?

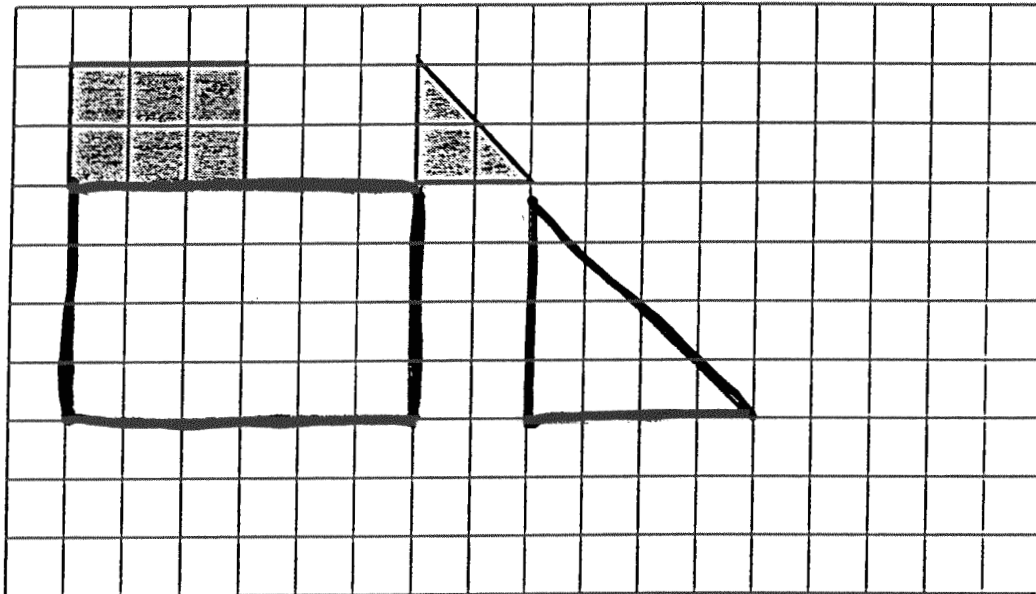
	Original	Enlarged
Rectangle	$6 \text{ units}^2$	$24 \text{ units}^2$
Triangle	$2.25 \text{ units}^2$	$12.25 \text{ units}^2$

- C Describe the relationship between the area of each original figure and its enlargement.

The relationship between the area of the original figure + its enlargement is the length + width doubled, causing the area to be more

## PAPER 6

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.



- A Sketch two new figures beneath the ones on the grid. Make the sides on each new figure twice the length of the sides on each original figure.
- B. What is the area of each of the original figures? What is the area of each enlarged sketch?

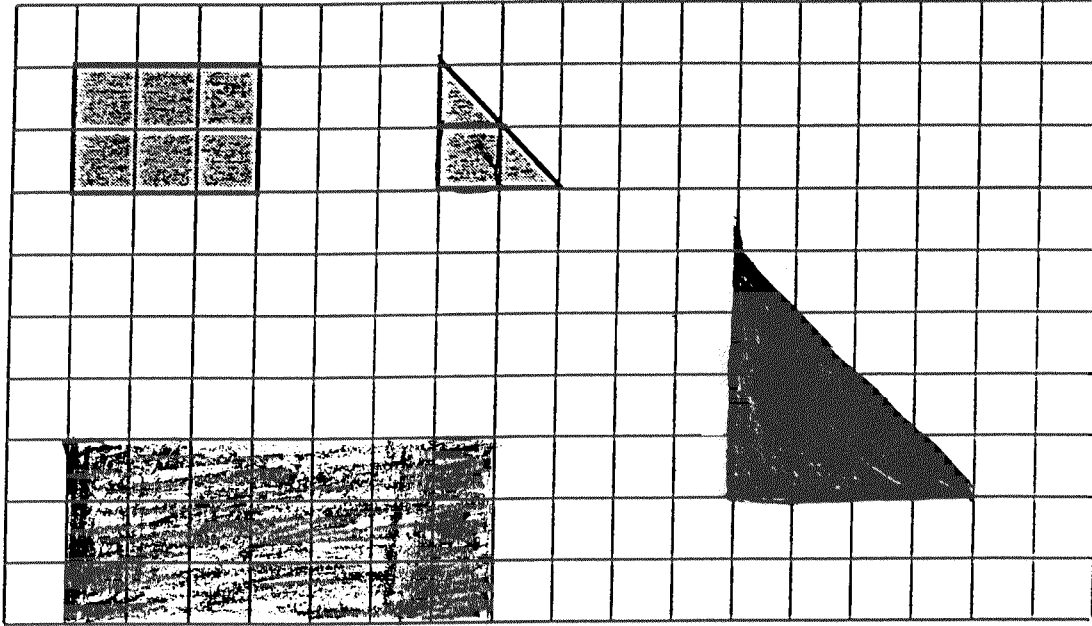
	Original	Enlarged
Rectangle	<u>6</u>	<u>24</u>
Triangle	<u>3</u>	<u>6</u>

- C Describe the relationship between the area of each original figure and its enlargement.

*The relationship is that the area is even on the rectangle and odd on the triangle.*

## PAPER 7

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.



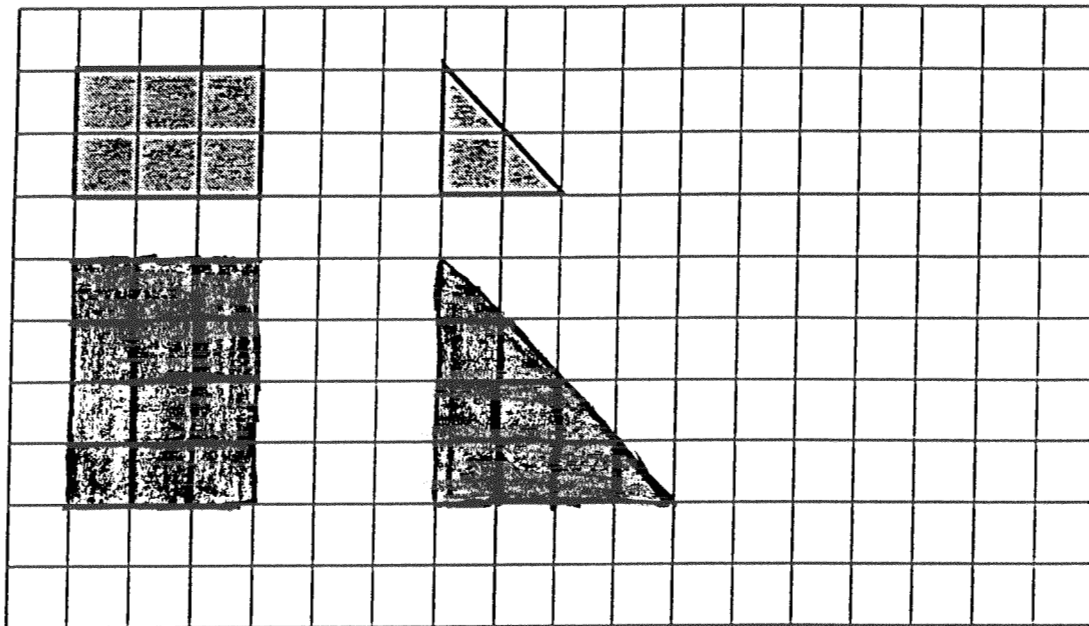
- A Sketch two new figures beneath the ones on the grid. Make the sides on each new figure twice the length of the sides on each original figure.
- B. What is the area of each of the original figures? What is the area of each enlarged sketch?

	Original	Enlarged
Rectangle	<u>6</u>	<u>15</u>
Triangle	<u>2</u>	<u>3</u>

- C Describe the relationship between the area of each original figure and its enlargement.

## PAPER 8

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.



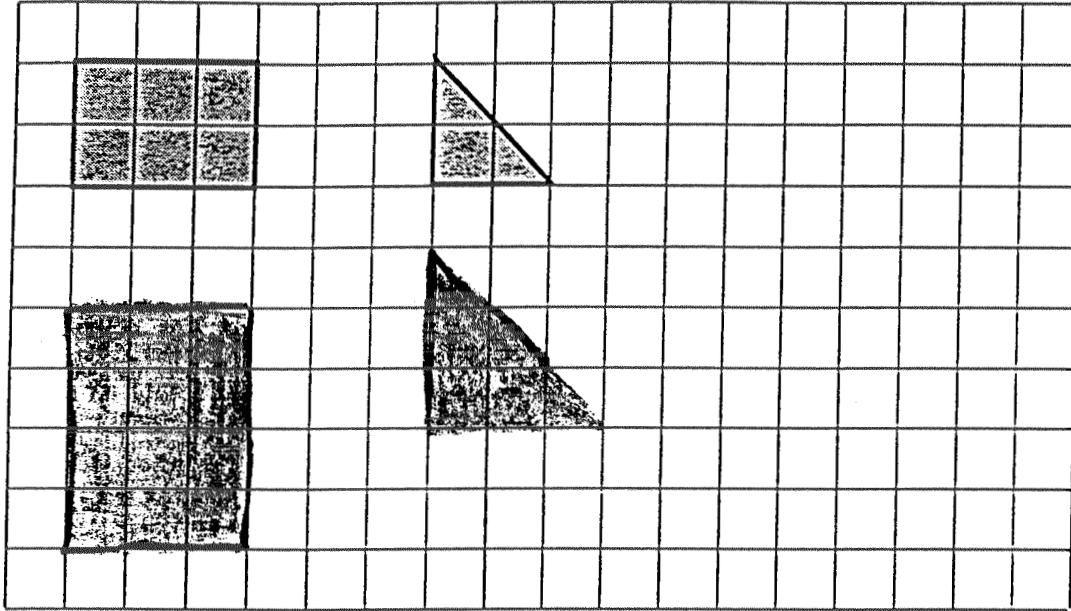
- A Sketch two new figures beneath the ones on the grid. Make the sides on each new figure twice the length of the sides on each original figure.
- B. What is the area of each of the original figures? What is the area of each enlarged sketch?

	Original	Enlarged
Rectangle	<u>6</u>	<u>12</u>
Triangle	<u>3</u>	<u>7</u>

- C Describe the relationship between the area of each original figure and its enlargement.

## PAPER 9

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.



- A Sketch two new figures beneath the ones on the grid. Make the sides on each new figure twice the length of the sides on each original figure.
- B. What is the area of each of the original figures? What is the area of each enlarged sketch?

	Original	Enlarged
Rectangle	<u>6</u>	<u>12</u>
Triangle	<u>2</u>	<u>6</u>

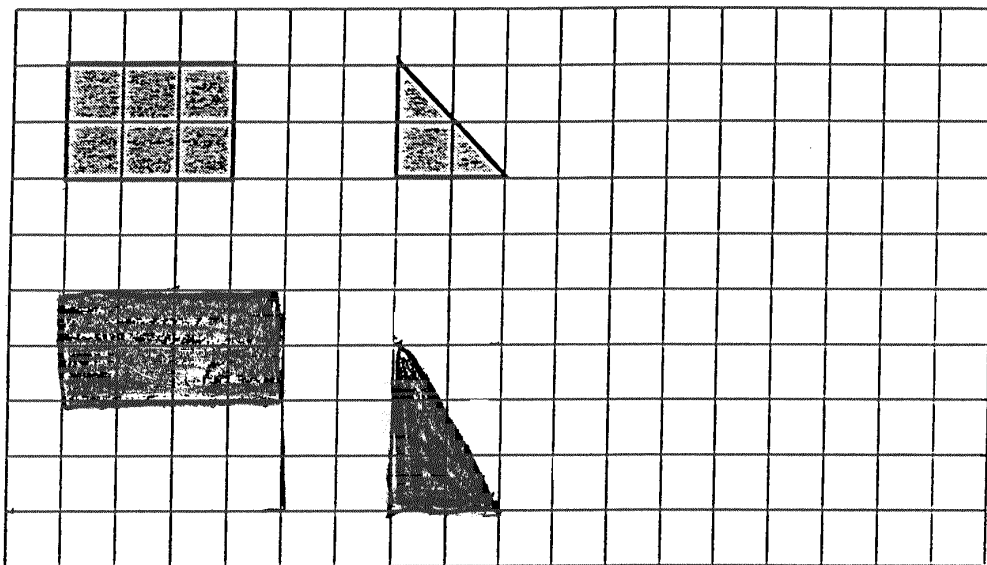
- C Describe the relationship between the area of each original figure and its enlargement.

On the rectangle it just doubled  
but for the triangle it got longer &  
just doubled  
its size



## PAPER 10

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.



- A Sketch two new figures beneath the ones on the grid. Make the sides on each new figure twice the length of the sides on each original figure.
- B. What is the area of each of the original figures? What is the area of each enlarged sketch?

	Original	Enlarged
Rectangle	<u>3</u>	<u>5</u>
Triangle	<u>6</u>	<u>8</u>

- C Describe the relationship between the area of each original figure and its enlargement.

The relation between the area of each original figure + it's enlargement is the original figure is the correct size And it's enlarge ment is twice the the size of it's original area.

## 7th Grade Constructed Response #2, Exemplar, Rubric

### **Exemplar**

Accept any logical question and correct answer that results from information in the table

### **Scoring Rubric**

**Question:**      **1 point**

A logical question that results from information in the table

**Answer and Explanation:**    **3 points**

**3 points**      Correct answer with correct explanation

**2 points**      Correct answer; incorrect explanation  
                 **OR**      Incorrect answer due to math errors; correct explanation

**1 point**      Correct answer; explanation omitted  
                 **OR**      Incorrect answer due to math errors; incorrect explanation

**0 points**      Incorrect answer; explanation omitted  
                 **OR**      Incorrect answer; incorrect explanation  
                 **OR**      Any other response

## 7th Grade Constructed Response #2

### Scoring of student papers

Papers are numbered on back in upper right hand corner.

- #1 4 points Question correct for 1 point; Answer and explanation correct for 3 points
- #2 4 points Question correct for 1 point; Answer and explanation correct for 3 points
- #3 4 points Question correct for 1 point; Answer and explanation correct for 3 points
- #4 3 points Question correct for 1 point; Answer correct, explanation incorrect for 2 points.
- #5 2 points Question correct for 1 point; Answer correct, explanation omitted for 1 point.
- #6 2 points Question correct for 1 point; Answer correct, explanation omitted for 1 point.
- #7 1 point Question correct for 1 point; Incorrect answer with incorrect explanation for 0 points
- #8 1 point Question correct for 1 point; Incorrect answer with incorrect explanation for 0 points

## PAPER 1

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

Write one question that uses the information in the table. Give the correct answer to your question. Also, give an explanation of why the answer is correct.

NOON TEMPERATURE  
JANUARY 1

City	Temperature
Chicago, IL	-6°C
Detroit, MI	-2°C
Grand Rapids, MI	0°C
Sandusky, OH	+2°C
Sault Ste. Marie, MI	-10°C
Traverse City, MI	-5°C

**EXAMPLE**

Question: Between which cities is there the LEAST difference in temperature?

Answer: There are two correct answers. There is a 2°C temperature difference between Detroit and Grand Rapids. There is also a 2°C difference between Grand Rapids and Sandusky.

Question: *What is the average of these cities's  
noon temperature?*

Answer: *The average temperatures of these cities is -3.5°C because when adding the temperatures together the sum is -21°C - when dividing this number by the number of cities which is 6, the average comes out to -3.5°C*

## PAPER 2

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

Write one question that uses the information in the table. Give the correct answer to your question. Also, give an explanation of why the answer is correct.

NOON TEMPERATURE  
JANUARY 1

City	Temperature
Chicago, IL	-6°C
Detroit, MI	-2°C
Grand Rapids, MI	0°C
Sandusky, OH	+2°C
Sault Ste. Marie, MI	-10°C
Traverse City, MI	-5°C

**EXAMPLE**

Question: Between which cities is there the LEAST difference in temperature?

Answer: There are two correct answers. There is a 2°C temperature difference between Detroit and Grand Rapids. There is also a 2°C difference between Grand Rapids and Sandusky.

Question: Between which two cities is there the most difference in temperature?

Answer: There is a 12°C difference in temperature between Sandusky, Ohio, and Sault Ste. Marie Michigan, because if you count from -10°C to +2°C, it equals out to be 12°C temperature difference.

## PAPER 3

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

Write one question that uses the information in the table. Give the correct answer to your question. Also, give an explanation of why the answer is correct.

NOON TEMPERATURE  
JANUARY 1

City	Temperature
Chicago, IL	-6°C
Detroit, MI	-2°C
Grand Rapids, MI	0°C
Sandusky, OH	+2°C
Sault Ste. Marie, MI	-10°C
Traverse City, MI	-5°C

**EXAMPLE**

Question: Between which cities is there the LEAST difference in temperature?

Answer: There are two correct answers. There is a 2°C temperature difference between Detroit and Grand Rapids. There is also a 2°C difference between Grand Rapids and Sandusky.

Question: Which 2 cities different temperature the most?

Answer: Sault Ste. Marie, MI and Sandusky, OH because -10°C is the lowest and +2°C is the highest making a difference of 12°C.

## PAPER 4

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

Write one question that uses the information in the table. Give the correct answer to your question. Also, give an explanation of why the answer is correct.

NOON TEMPERATURE  
JANUARY 1

City	Temperature
Chicago, IL	-6°C
Detroit, MI	-2°C
Grand Rapids, MI	0°C
Sandusky, OH	+2°C
Sault Ste. Marie, MI	-10°C
Traverse City, MI	-5°C

~~11 0 11 11 11 11 11~~

EXAMPLE

Question: Between which cities is there the LEAST difference in temperature?

Answer: There are two correct answers. There is a 2°C temperature difference between Detroit and Grand Rapids. There is also a 2°C difference between Grand Rapids and Sandusky.

Question:

Between which cities is there the MOST difference in temperature?

Answer:

The answer is Sault Ste Marie, MI and Sandusky, OH. There is a 13°C difference.

## PAPER 5

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

Write one question that uses the information in the table. Give the correct answer to your question. Also, give an explanation of why the answer is correct.

NOON TEMPERATURE  
JANUARY 1

City	Temperature
Chicago, IL	-6°C
Detroit, MI	-2°C
Grand Rapids, MI	0°C
Sandusky, OH	+2°C
Sault Ste. Marie, MI	-10°C
Traverse City, MI	-5°C

EXAMPLE

Question: Between which cities is there the LEAST difference in temperature?

Answer: There are two correct answers. There is a 2°C temperature difference between Detroit and Grand Rapids. There is also a 2°C difference between Grand Rapids and Sandusky.

Question: which 2 cities have the most  
Below zero °

Answer: Sault Ste. Marie, MI &  
Chicago, IL.



## PAPER 6

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

Write one question that uses the information in the table. Give the correct answer to your question. Also, give an explanation of why the answer is correct.

NOON TEMPERATURE  
JANUARY 1

City	Temperature
Chicago, IL	-6°C
Detroit, MI	-2°C
Grand Rapids, MI	0°C
Sandusky, OH	+2°C
Sault Ste. Marie, MI	-10°C
Traverse City, MI	-5°C

**EXAMPLE**

Question: Between which cities is there the LEAST difference in temperature?

Answer: There are two correct answers. There is a 2°C temperature difference between Detroit and Grand Rapids. There is also a 2°C difference between Grand Rapids and Sandusky.

Question:

What is the average temp. of all the cities listed

Answer:

The average temp. of all the cities listed is -3.5°C

## PAPER 7

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

Write one question that uses the information in the table. Give the correct answer to your question. Also, give an explanation of why the answer is correct.

NOON TEMPERATURE  
JANUARY 1

City	Temperature
Chicago, IL	-6°C
Detroit, MI	-2°C
Grand Rapids, MI	0°C
Sandusky, OH	+2°C
Sault Ste. Marie, MI	-10°C
Traverse City, MI	-5°C

EXAMPLE

Question: Between which cities is there the LEAST difference in temperature?

Answer: There are two correct answers. There is a 2°C temperature difference between Detroit and Grand Rapids. There is also a 2°C difference between Grand Rapids and Sandusky.

Question: What is the difference in temperature between Detroit, MI and Sandusky, OH? Explain answer!

Answer: The difference between the two is that Michigan is below two degrees and Ohio is above two degrees. My answer is correct because in Michigan there is a negative sign and in Ohio there is a positive sign.

## PAPER 8

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

Write one question that uses the information in the table. Give the correct answer to your question. Also, give an explanation of why the answer is correct.

NOON TEMPERATURE  
JANUARY 1

City	Temperature
Chicago, IL	-6°C
Detroit, MI	-2°C
Grand Rapids, MI	0°C
Sandusky, OH	+2°C
Sault Ste. Marie, MI	-10°C
Traverse City, MI	-5°C

**EXAMPLE**

Question: Between which cities is there the LEAST difference in temperature?

Answer: There are two correct answers. There is a 2°C temperature difference between Detroit and Grand Rapids. There is also a 2°C difference between Grand Rapids and Sandusky.

Question:

*Between which cities is there the most difference in temperature?*

Answer:

*There is 10°C temperature difference between Sault Ste. Marie and Grand Rapids.*

*my answer is correct because it shows it on the table*